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# Mineral Industry Surveys

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## NICKEL IN FEBRUARY 2005

Reported domestic nickel consumption in February, on a daily average basis, was 7% greater than that of January, according to the U.S. Geological Survey. Daily average nickel consumption of cathodes, pellets, briquets, powder, and ferronickel for stainless steel was 68.0 metric tons per day (t/d), 2% greater than the 66.5 t/d for January, but 4% less than the 70.6 t/d (revised) for February 2004. Consumption of >99.8% nickel metal to make superalloys (such as INCONEL 718 and WASPALOY) decreased by 4% from January levels, on a daily average basis. In contrast, consumption to make corrosion-resistant, less stress-resistant nickel-base alloys (such as INCONEL 600 and Nickel 200) increased by 21% on a daily average basis. Sales to plating companies averaged 42.8 t/d, about 15% more than the January sales figure of 37.3 t/d.

On February 28, U.S. consumer stocks of cathode, pellets, briquets, and powder totaled 1,500 metric tons (t), 2% greater than the 1,470 t on January 31 and 5% greater than the 1,420 t (revised) reported for December 31, 2004. Stocks in London Metal Exchange (LME) warehouses worldwide totaled 9,924 t on February 28, 40% less than the 16,644 t on January 31.

The United States imported 12,100 t of primary nickel in January 2005, 2% less than the 12,400 t for December 2004. Trade data for February will appear in a subsequent report.

### Update: Hybrid vehicle registrations in the United States continue to soar, increasing demand for battery-grade nickel products

Sales of gasoline-electric hybrid vehicles have risen sharply in recent months because of design improvements, a better selection of models, and higher gasoline prices. U.S. registrations of new hybrid passenger vehicles rose to 83,153 in 2004, up 81% from 45,943 in 2003. The Toyota Prius accounted for 53,761 of the registrations, or 64% of the market in 2004. The second most popular hybrid was the Honda Civic, with 25,586 registrations, or 31% of the market. California, by far, had the most new registrations—25,021 or 30% of the total, followed by Virginia (7%) and Washington State (4%). The U.S. market for hybrids has grown 960% since its commercial debut in 2000, when new registrations totaled only 7,781 (R.L. Polk & Co., 2005§[1]).

At the end of 2004, only five passenger models were commercially available in the United States—the Prius, the Civic, the Honda Accord, the Honda Insight, and the Ford Escape SUV. Three more models have been introduced since then, and automobile manufacturers are planning to offer almost a dozen additional models during the next 3 years (Williams, 2005§).

Most hybrid vehicles have two batteries. A large traction battery pack is coupled to an electric motor for propulsion, while an auxiliary, typically 12-volt, more conventional battery powers accessories and the vehicle computer. The traction battery packs in the Prius, the Escape, and the three Hondas all use nickel metal-hydride (NiMH) chemistry. The traction/powertrain battery pack captures, stores, and releases electrical energy as the vehicle moves.

There are two basic kinds of hybrid automobiles—full and mild. Full hybrids like the Escape can operate solely in the electric mode if sufficient power is stored in the traction battery. A mild hybrid, in contrast, always requires power from the internal combustion engine. The battery pack in most full hybrid models is charged using energy from two sources. The pack can be recharged directly by energy taken from the wheels through the generator (regenerative braking) or by using excess energy from the gasoline engine to turn the generator. Because of this technology, the pack never has to be plugged into the public utility grid.

### Internet References Cited

R.L. Polk & Co., 2005 (April 25), Hybrid vehicle registrations increase 81 percent in 2004, accessed May 26, 2005, at URL http://www.polk.com.
Williams, G. Chambers, III, 2005 (June 8), Hybrid vehicle update, accessed June 10, 2005, at URL http://www.star-telegram.com or URL http://www.dfw.com/mld/dfw/classifieds/automotive/11828363.htm.

[1]References that include a section mark (§) are found in the Internet References Cited section.

TABLE 1
CONSUMPTION OF NICKEL (EXCLUSIVE OF SCRAP), BY FORM AND USE[1]

(Metric tons, nickel content)

| Period | Cathodes, pellets, briquets, and powder | Ferronickel | Oxide-sinter, salts, and other forms | Total | Total year to date |
|---|---|---|---|---|---|
| 2004: | | | | | |
| February | 4,950 | 455 | 26 | 5,430 | 10,400 |
| March | 5,020 | 529 | 36 | 5,590 | 15,900 |
| April | 4,670 | 458 | 52 | 5,180 | 21,100 |
| May | 5,280 | 528 | 27 | 5,840 | 27,000 |
| June | 5,230 | 556 | 39 | 5,830 | 32,800 |
| July | 4,790 | 536 | 43 | 5,370 | 38,200 |
| August | 4,850 | 677 | 36 | 5,570 | 43,700 |
| September | 4,540 | 549 | 47 | 5,140 | 48,900 |
| October | 5,080 | 734 | 41 | 5,860 | 54,700 |
| November | 4,610 | 504 | 37 | 5,150 | 59,900 |
| December | 4,520 | 482 | 36 | 5,040 | 64,900 |
| January-December | 57,900 | 6,600 | 454 | 64,900 | XX |
| 2005: | | | | | |
| January | 5,430 r | 589 r | 40 | 6,060 r | 6,060 r |
| February: | | | | | |
| Steel: | | | | | |
| Stainless and heat resisting | 1,370 | 534 | W . | 1,900 | 4,010 |
| Alloy (excludes stainless) | 291 | -- | -- | 291 | 554 |
| Superalloys | 965 | -- | W | 965 | 2,110 |
| Copper-nickel alloys | W | -- | -- | W | W |
| Electric, magnetic, and expansion alloys | 12 | -- | -- | 12 | 25 |
| Other nickel & nickel alloys | W | -- | W | W | W |
| Cast iron | W | -- | -- | W | W |
| Electroplating (sales to platers) | 1,200 | -- | -- | 1,200 | 2,350 |
| Chemical and chemical uses | W | -- | -- | W | W |
| Other uses | 1,440 | -- | 38 | 1,480 | 2,850 |
| Total reported | 5,270 [2] | 534 | 38 | 5,850 | 11,900 |
| Total all companies (calc)[3] | XX | XX | XX | 11,000 | 22,400 |
| 2005: January-February | 10,700 | 1,120 | 79 | 11,900 | XX |
| 2004: January-February | 9,250 | 1,050 | 62 | 10,400 | XX |

[r]Revised. W Withheld to avoid disclosing company proprietary data; included in "Other uses" category. XX Not applicable. -- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Of consumption, 4,270 metric tons were consumed as cathodes and pellets, the remainder as briquets and powder.

[3]Figures represent calculated apparent consumption; based on the revised proportion of reported primary consumption (53.17%) to apparent primary consumption for 2003.

TABLE 2
ENDING STOCKS OF NICKEL (EXCLUSIVE OF SCRAP) HELD BY CONSUMERS, BY FORM AND USE [1, 2]

(Metric tons, nickel content)

| Period | Cathodes, pellets, briquets, and powder | Ferronickel | Oxide-sinter, salts, and other forms | Total |
|---|---|---|---|---|
| 2004: | | | | |
| February | 1,660 | 111 | 44 | 1,810 |
| March | 1,630 | 108 | 40 | 1,780 |
| April | 1,750 r | 227 | 34 | 2,020 |
| May | 1,380 | 158 | 42 | 1,580 |
| June | 1,470 | 185 | 45 | 1,700 |
| July | 1,260 r | 147 | 30 | 1,440 |
| August | 1,490 | 139 | 32 | 1,660 |
| September | 1,640 | 184 | 31 | 1,860 |
| October | 1,390 r | 146 | 50 | 1,590 |
| November | 1,340 | 170 | 59 r | 1,570 |
| December | 1,420 r | 147 | 45 | 1,610 r |
| 2005: | | | | |
| January | 1,470 | 192 r | 52 | 1,720 |
| February: | | | | |
| Steel (stainless, heat resisting and alloy) | 553 | 207 | (3) | 760 |
| Nonferrous alloys [4] | 918 | 20 | (3) | 938 |
| Foundry (cast irons) | (3) | W | -- | (3) |
| Chemical (catalysts, ceramics, plating salt, etc.) and unspecified uses | 24 | -- | 68 | 92 |
| Total | 1,500 | 227 | 68 | 1,790 |

rRevised. W Withheld to avoid disclosing company proprietary data. -- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Stocks held by companies that consume nickel in more than one end use category are credited to the major category. Stocks are subject to revisions owing to inventory adjustments.
[3]Included in the "Chemical and unspecified uses" category.
[4]Includes superalloys, nickel-copper and copper-nickel alloys, permanent magnet alloys, and other nickel alloys.

TABLE 3
CONSUMPTION AND ENDING STOCKS OF PURCHASED SECONDARY NICKEL, BY USE[1]

(Metric tons, nickel content)

| | Consumption | | | Stocks | | |
|---|---|---|---|---|---|---|
| Period | Ferrous scrap[2] | Nonferrous scrap[3] | Total scrap | Ferrous scrap[2] | Nonferrous scrap[3] | Total scrap |
| 2004: | | | | | | |
| February | 4,830 | 708 | 5,540 | 2,620 | 79 | 2,700 |
| March | 5,570 | 937 | 6,510 | 3,180 | 80 | 3,260 |
| April | 5,330 | 865 | 6,190 | 2,860 | 82 | 2,940 |
| May | 5,260 | 801 | 6,060 | 2,640 | 63 | 2,700 |
| June | 5,140 | 804 | 5,940 | 2,660 | 85 | 2,750 |
| July | 4,900 | 672 | 5,570 | 2,550 | 76 | 2,630 |
| August | 5,060 | 956 | 6,020 | 2,320 | 73 | 2,390 |
| September | 4,440 | 812 | 5,250 | 2,710 | 75 | 2,780 |
| October | 4,900 | 709 | 5,610 | 2,750 | 70 | 2,820 |
| November | 4,750 | 736 | 5,490 | 2,530 | 63 | 2,590 |
| December | 5,230 | 581 | 5,810 | 2,290 | 65 | 2,360 |
| January-December | 60,600 | 9,280 | 69,800 | XX | XX | XX |
| 2005: | | | | | | |
| January | 4,690 | 676 | 5,370 | 2,330 | 80 | 2,410 |
| February | 4,680 | 770 | 5,450 | 2,440 | 90 | 2,530 |
| January-February | 9,380 | 1,450 | 10,800 | XX | XX | XX |

XX Not applicable.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Nickel content is calculated from an average nickel content and the reported gross weight of scrap.
[3]Combined consumption and stocks of aluminum-base, copper-base, and nickel-base scrap.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF NICKEL, BY COUNTRY[1]

(Metric tons, nickel content)[2]

| Period and country of origin | Cathodes pellets, and briquets | Powder and flakes | Ferro-nickel | Metal-lurgical-grade oxide | Waste and scrap | Stainless steel scrap | Chemicals | Total[3] | Total year to date[4] | Wrought nickel |
|---|---|---|---|---|---|---|---|---|---|---|
| 2004: | | | | | | | | | | |
| January | 7,360 | 829 | 1,040 | 40 | 489 | 933 | 435 | 11,100 | 11,100 | 77 |
| February | 7,200 | 834 | 1,070 | 161 | 667 | 1,020 | 485 | 11,400 | 22,600 | 49 |
| March | 10,700 | 812 | 806 | 134 | 1,430 | 1,660 | 376 | 15,900 | 38,400 | 72 |
| April | 10,700 | 720 | 1,680 | 23 | 574 | 908 | 296 | 14,900 | 53,400 | 53 |
| May | 8,530 | 564 | 941 | -- | 698 | 680 | 381 | 11,800 | 65,200 | 55 |
| June | 9,190 | 732 | 978 | -- | 553 | 680 | 324 | 12,500 | 77,600 | 86 |
| July | 7,370 | 914 | 1,070 | -- | 624 | 663 | 374 | 11,000 | 88,600 | 79 |
| August | 9,770 | 800 | 1,020 | 24 | 585 | 928 | 434 | 13,600 | 102,000 | 116 |
| September | 6,590 | 571 | 1,080 | 207 | 689 | 697 | 339 | 10,200 | 112,000 | 88 |
| October | 11,100 | 976 | 1,280 | 210 | 535 | 780 | 321 | 15,300 | 128,000 | 43 |
| November | 9,140 | 659 | 1,240 | 240 | 602 | 696 | 378 | 13,000 | 141,000 | 33 |
| December | 9,340 | 814 | 1,750 | 170 | 403 | 1,340 | 295 | 14,100 | 155,000 | 46 |
| January-December | 107,000 | 9,230 r | 14,000 | 1,210 | 7,850 | 11,000 | 4,440 | 155,000 | XX | 797 r |
| 2005: | | | | | | | | | | |
| January: | | | | | | | | | | |
| Australia | 480 | 60 | -- | -- | -- | -- | -- | 540 | 540 | -- |
| Brazil | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Canada | 4,960 | 428 | -- | 112 | 106 | 590 | -- | 6,200 | 6,200 | (5) |
| Colombia | -- | -- | 388 | -- | -- | -- | -- | 388 | 388 | -- |
| Dominican Republic | -- | -- | 1,410 | -- | -- | (5) | -- | 1,410 | 1,410 | -- |
| Finland | 260 | 73 | -- | -- | -- | -- | 96 | 429 | 429 | -- |
| France | -- | -- | 37 [6] | -- | 144 | 4 | 20 | 211 | 205 [6] | 4 |
| Germany | (5) | 7 | -- | -- | 46 | (5) | 46 | 99 | 99 | 16 |
| Japan | -- | 4 | -- | -- | 3 | -- | 10 | 17 | 17 | 14 |
| Mexico | -- | -- | -- | -- | 6 | 145 | 3 | 154 | 154 | -- |
| New Caledonia | -- | -- | 100 | -- | -- | -- | -- | 100 | 100 | -- |
| Norway | 1,320 | -- | -- | -- | -- | -- | -- | 1,320 | 1,320 | -- |
| Russia | 1,910 | 60 | -- | -- | -- | -- | -- | 1,970 | 1,970 | -- |
| South Africa | 20 | 59 | -- | -- | -- | -- | -- | 79 | 79 | -- |
| Sweden | -- | 2 | -- | -- | -- | -- | -- | 2 | 2 | -- |
| United Kingdom | 7 | 59 | -- | -- | 155 | -- | 6 | 227 | 227 | (5) |
| Venezuela | -- | -- | -- | -- | -- | 16 | -- | 16 | 16 | -- |
| Zimbabwe | 60 | -- | -- | -- | -- | -- | -- | 60 | 60 | -- |
| Other | 20 | 4 | -- | 2 | 125 | 25 | 98 | 274 | 274 | 6 |
| Total | 9,040 | 756 | 1,940 | 114 | 585 | 780 | 279 | 13,500 | 13,500 | 40 |

rRevised. XX Not applicable. -- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]The nickel contents are assumed to be as follows: metallurgical-grade oxide (77%), waste and scrap (50%), and stainless steel scrap (7.5%). The chemicals category includes chlorides (25%); sulfates (22%); other salts (22%); supported catalysts (22%); and oxide, sesquioxide, and hydroxide (65%).

[3]Excludes wrought nickel.

[4]May include revisions for prior months.

[5]Less than 1/2 unit.

[6]All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

TABLE 5
U.S. EXPORTS OF NICKEL, BY COUNTRY[1]

(Metric tons, nickel content)[2]

| Period and country of destination | Cathodes pellets, and briquets | Powder and flakes | Ferro-nickel | Metal-lurgical-grade oxide | Waste and scrap | Stainless steel scrap | Chemicals | Total[3] | Total year to date | Wrought nickel |
|---|---|---|---|---|---|---|---|---|---|---|
| 2004: | | | | | | | | | | |
| January | 52 | 129 | 15 | 5 | 657 | 2,370 | 399 | 3,630 | 3,630 | 153 |
| February | 85 | 166 | -- | 17 | 540 | 2,550 | 396 | 3,750 | 7,380 | 54 |
| March | 116 | 150 | (4) | 8 | 1,000 | 3,800 | 497 | 5,570 | 12,900 | 59 |
| April | 144 | 132 | 3 | 8 | 1,070 | 2,660 | 563 | 4,570 | 17,500 | 227 |
| May | 54 | 127 | 23 | 4 | 1,290 | 3,100 | 323 | 4,920 | 22,400 | 120 |
| June | 187 | 138 | 3 | 4 | 1,310 | 4,720 | 567 | 6,930 | 29,400 | 65 |
| July | 18 | 171 | (4) | 2 | 1,160 | 2,600 | 473 | 4,420 | 33,800 | 100 |
| August | 39 | 172 | -- | 1 | 1,190 | 2,330 | 200 | 3,940 | 37,700 | 68 |
| September | 112 | 238 | -- | 7 | 1,170 | 2,610 | 498 | 4,640 | 42,400 | 86 |
| October | 60 | 257 | 1 | 2 | 1,110 | 3,620 | 197 | 5,240 | 47,600 | 44 |
| November | 77 | 257 | 1 | 45 | 890 | 2,530 | 285 | 4,080 | 51,700 | 42 |
| December | 27 | 196 | 23 | 98 | 1,030 | 2,980 | 227 | 4,580 | 56,300 | 95 |
| January-December | 971 [r] | 2,130 | 69 | 201 | 12,400 | 35,900 | 4,630 | 56,300 | XX | 1,110 |
| 2005: | | | | | | | | | | |
| January: | | | | | | | | | | |
| Australia | -- | -- | -- | -- | 59 | -- | (4) | 59 | 59 | 2 |
| Belgium | -- | (4) | -- | -- | -- | 3 | 15 | 18 | 18 | -- |
| Canada | (4) | 12 | 1 | 44 | 967 | 162 | 65 | 1,250 | 1,250 | 6 |
| China | -- | 88 | -- | -- | -- | 741 | 9 | 838 | 838 | 3 |
| Finland | -- | -- | -- | -- | 31 | -- | -- | 31 | 31 | -- |
| Germany | -- | 21 | -- | 112 | 9 | 2 | 5 | 149 | 149 | 2 |
| India | -- | 1 | -- | -- | -- | 238 | 24 | 263 | 263 | -- |
| Italy | -- | (4) | -- | -- | -- | -- | (4) | (4) | (4) | 1 |
| Japan | 2 | 13 | -- | 3 | 26 | 37 | 13 | 94 | 94 | 8 |
| Korea, Republic of | -- | 11 | -- | -- | -- | 363 | 7 | 381 | 381 | 1 |
| Mexico | 35 | 3 | -- | -- | -- | 373 | 4 | 415 | 415 | 8 |
| Netherlands | -- | (4) | -- | -- | 2 | 90 | -4 | 92 | 92 | 3 |
| South Africa | -- | -- | -- | -- | -- | -- | 37 | 37 | 37 | -- |
| Spain | -- | (4) | -- | -- | -- | 1 | -- | 1 | 1 | (4) |
| Sweden | -- | -- | -- | -- | -- | -- | 1 | 1 | 1 | 3 |
| Taiwan | -- | -- | -- | -- | -- | 272 | 4 | 276 | 276 | 1 |
| United Kingdom | -- | 7 | -- | -- | 130 | 4 | 2 | 143 | 143 | 3 |
| Other | (4) | 55 | -- | 2 | 10 | 110 | 42 | 219 | 219 | 22 |
| Total | 37 | 211 | 1 | 161 | 1,230 | 2,400 | 228 | 4,270 | 4,270 | 63 |

[r]Revised. XX Not applicable. -- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]The nickel contents are assumed to be as follows: metallurgical-grade oxide (77%), waste and scrap (50%), and stainless steel scrap (7.5%). The chemicals category includes chlorides (25%); sulfates (22%); other salts (22%); supported catalysts (22%); and oxide, sesquioxide, and hydroxide (65%).
[3]Excludes wrought nickel.
[4]Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF NICKEL ALLOYS, BY COUNTRY[1]

(Metric tons, gross weight)

| Period and country of origin | Unwrought alloyed ingot | Bars, rods and profiles | Wire | Plates and sheets | Foil | Tubes and pipes | Other alloyed articles | Total | Total year to date |
|---|---|---|---|---|---|---|---|---|---|
| 2004: | | | | | | | | | |
| January | 102 | 278 | 286 | 193 | 14 | 134 | 133 | 1,140 | 1,140 |
| February | 165 | 214 | 362 | 251 | 8 | 374 | 238 | 1,610 | 2,750 |
| March | 102 | 166 | 446 | 213 | 18 | 362 | 459 | 1,770 | 4,520 |
| April | 345 | 255 | 504 | 164 | 44 | 773 | 172 | 2,260 | 6,770 |
| May | 123 | 269 | 494 | 131 | 14 | 231 | 115 | 1,380 | 8,150 |
| June | 227 | 344 | 517 | 301 | 40 | 136 | 100 | 1,670 | 9,820 |
| July | 271 | 322 | 504 | 192 | 32 | 140 | 87 | 1,550 | 11,400 |
| August | 324 | 251 | 496 | 236 | 31 | 89 | 109 | 1,540 | 12,900 |
| September | 528 | 193 | 440 | 192 | 30 | 317 | 79 | 1,780 | 14,700 |
| October | 295 | 285 | 477 | 215 | 7 | 148 | 206 | 1,630 | 16,300 |
| November | 245 | 247 | 624 | 280 | 41 | 246 | 233 | 1,920 | 18,200 |
| December | 269 | 300 | 588 | 226 | 43 | 106 | 145 | 1,680 | 19,900 |
| January-December | 3,000 | 3,120 | 5,740 | 2,590 | 322 | 3,060 | 2,080 | 19,900 | XX |
| 2005: | | | | | | | | | |
| January: | | | | | | | | | |
| Australia | 66 | -- | -- | -- | -- | -- | -- | 66 | 66 |
| Belgium | -- | 1 | (2) | (2) | -- | -- | (2) | 1 | 1 |
| Canada | -- | -- | (2) | -- | -- | 4 | 14 | 18 | 18 |
| China | -- | -- | 1 | -- | -- | -- | 106 | 107 | 107 |
| France | -- | 29 | 105 | 5 | -- | 28 | 1 | 168 | 168 |
| Germany | 52 | 123 | 242 | 222 | 35 | 28 | 2 | 704 | 704 |
| Italy | -- | 35 | 4 | -- | -- | -- | 119 | 158 | 158 |
| Japan | -- | -- | 4 | (2) | -- | 3 | 1 | 8 | 8 |
| Mexico | -- | -- | -- | -- | (2) | -- | 10 | 10 | 10 |
| Netherlands | -- | -- | (2) | -- | -- | -- | 14 | 14 | 14 |
| South Africa | 78 | -- | -- | -- | -- | -- | -- | 78 | 78 |
| Sweden | -- | -- | 233 | 7 | -- | 1 | -- | 241 | 241 |
| United Kingdom | 42 | 23 | 9 | (2) | (2) | 2 | 16 | 92 | 92 |
| Other | 35 | 9 | 2 | -- | -- | 59 [3] | 21 | 127 | 127 |
| Total | 273 | 220 | 600 | 234 | 35 | 125 | 304 | 1,790 | 1,790 |

XX Not applicable. -- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Less than 1/2 unit.

[3]All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

TABLE 7
U.S. EXPORTS OF NICKEL ALLOYS, BY COUNTRY[1]

(Metric tons, gross weight)

| Period and country of destination | Unwrought alloyed ingot | Bars, rods and profiles | Wire | Plates and sheets | Foil | Tubes and pipes | Other alloyed articles | Total | Total year to date |
|---|---|---|---|---|---|---|---|---|---|
| 2004: | | | | | | | | | |
| January | 522 | 731 | 155 | 366 | 9 | 118 | 231 | 2,130 | 2,130 |
| February | 543 | 777 | 155 | 343 | 15 | 172 | 299 | 2,300 | 4,440 |
| March | 980 | 640 | 92 | 491 | 30 | 184 | 333 | 2,750 | 7,190 |
| April | 283 | 649 | 99 | 472 | 22 | 144 | 303 | 1,970 | 9,160 |
| May | 457 | 976 | 168 | 334 | 46 | 119 | 543 | 2,640 | 11,800 |
| June | 511 | 722 | 130 | 427 | 33 | 170 | 272 | 2,270 | 14,100 |
| July | 614 | 1,100 | 177 | 350 | 11 | 132 | 244 | 2,630 | 16,700 |
| August | 629 | 760 | 176 | 234 | 10 | 123 | 221 | 2,150 | 18,800 |
| September | 1,010 | 1,080 | 169 | 389 | 16 | 163 | 257 | 3,090 | 21,900 |
| October | 517 | 776 | 190 | 390 | 26 | 178 | 236 | 2,310 | 24,300 [r] |
| November | 613 | 1,110 | 183 | 327 | 21 | 148 | 256 | 2,660 | 26,900 |
| December | 823 | 1,100 | 157 | 350 | 5 | 150 | 244 | 2,830 | 29,700 |
| January-December | 7,510 | 10,400 | 1,850 | 4,470 | 244 | 1,800 | 3,440 | 29,700 | XX |
| 2005: | | | | | | | | | |
| January: | | | | | | | | | |
| Australia | 17 | -- | (2) | 2 | -- | (2) | (2) | 19 | 19 |
| Belgium | 196 | 214 | 5 | -- | (2) | (2) | 1 | 416 | 416 |
| Canada | 5 | 32 | 14 | 51 | 2 | 36 | 18 | 158 | 158 |
| China | -- | 86 | 2 | 11 | 1 | (2) | 38 | 138 | 138 |
| France | 135 | 278 | 1 | 20 | (2) | 1 | (2) | 435 | 435 |
| Germany | 7 | 57 | 7 | 16 | (2) | 2 | 2 | 91 | 91 |
| India | -- | 57 | -- | 1 | -- | 1 | (2) | 59 | 59 |
| Ireland | -- | -- | (2) | 2 | -- | -- | (2) | 2 | 2 |
| Israel | (2) | 79 | 4 | 7 | 1 | (2) | 1 | 92 | 92 |
| Italy | 121 | 36 | (2) | 26 | (2) | 1 | 1 | 185 | 185 |
| Japan | 476 | 54 | 1 | 13 | (2) | 13 | 3 | 560 | 560 |
| Korea, Republic of | -- | 5 | 2 | 24 | 1 | 2 | 1 | 35 | 35 |
| Mexico | (2) | 21 | 27 | 8 | 5 | 75 | 47 | 183 | 183 |
| Netherlands | -- | 19 | (2) | 4 | -- | 43 | (2) | 66 | 66 |
| Singapore | 1 | 4 | (2) | (2) | -- | 3 | 17 | 25 | 25 |
| Spain | (2) | -- | -- | 56 | -- | (2) | (2) | 56 | 56 |
| Sweden | (2) | -- | -- | 21 | -- | -- | 3 | 24 | 24 |
| Switzerland | 7 | -- | 6 | 3 | (2) | (2) | (2) | 16 | 16 |
| Taiwan | 9 | 2 | (2) | 6 | -- | 6 | 1 | 24 | 24 |
| United Kingdom | 1 | 227 | 6 | 19 | (2) | 24 | 5 | 282 | 282 |
| Other | 19 | 10 | 9 | 22 | 1 | 19 | 48 | 128 | 128 |
| Total | 994 | 1,180 | 84 | 312 | 11 | 226 | 186 | 2,990 | 2,990 |

[r]Revised. XX Not applicable. -- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 8
NICKEL CONSUMPTION IN CAST AND WROUGHT PRODUCTS

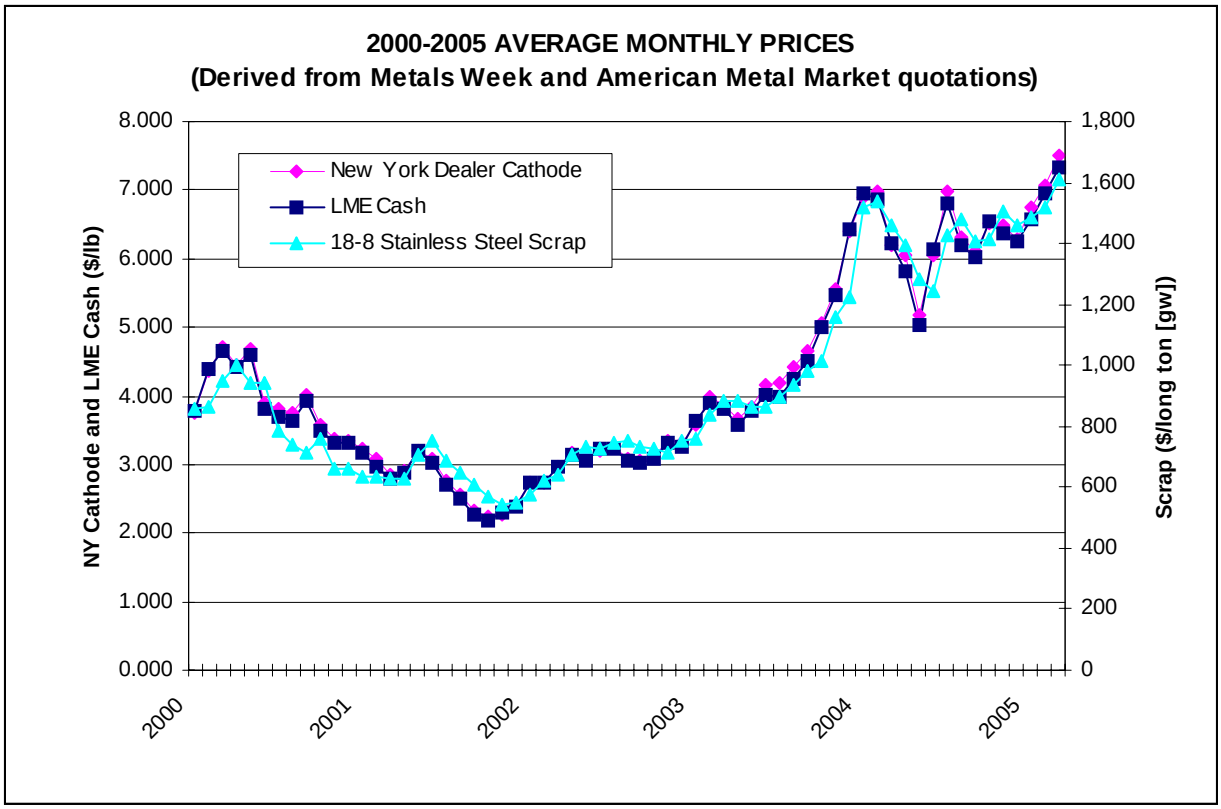
| | Percent | |
|---|---|---|
| | Wrought | Cast |
| February 2005: | | |
| Stainless and heat resisting steels | 100 | (1) |
| Alloy steels | 99 | 1 |
| Superalloys | 88 | 12 |
| Copper-nickel alloys | 95 | 5 |
| Other nickel-base alloys | 100 | (1) |

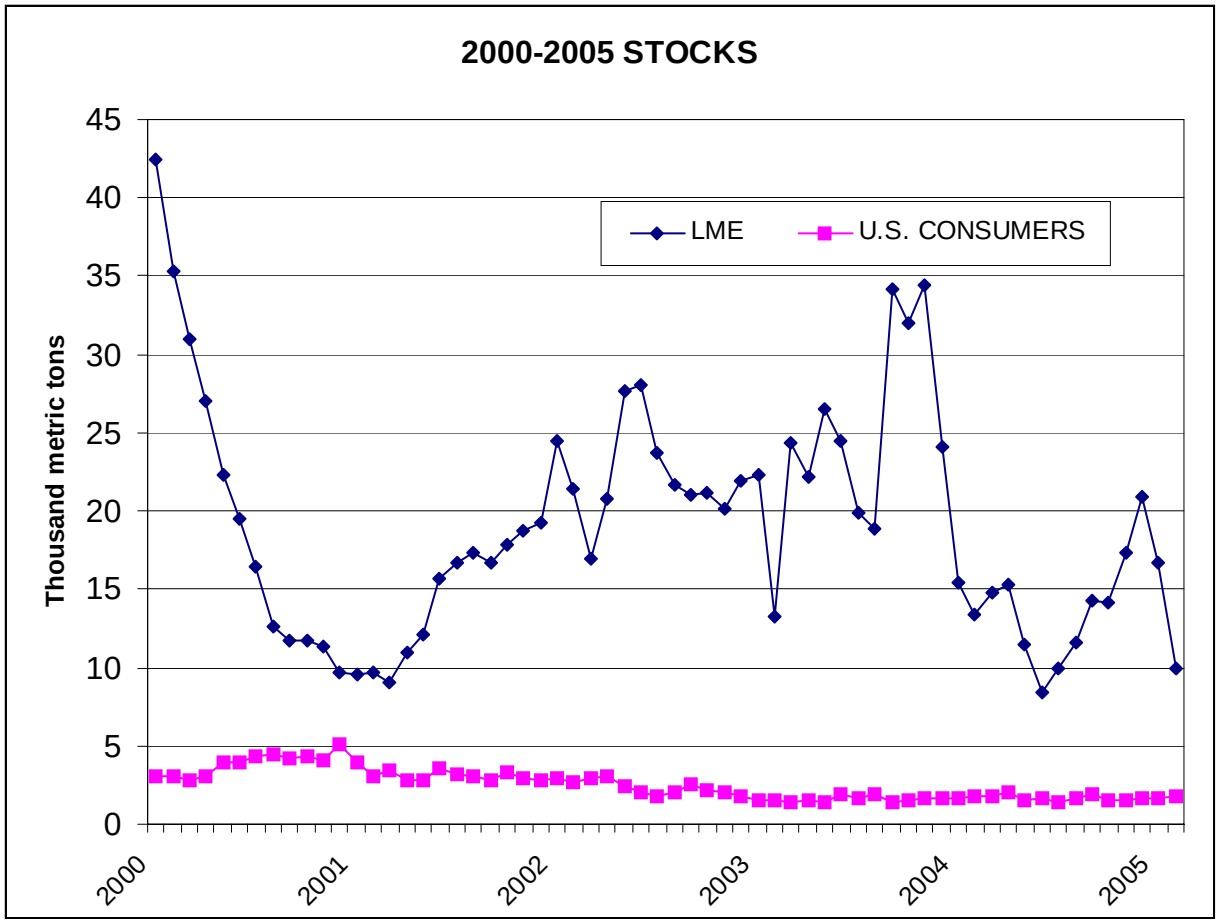
[1]Less than 1/2 unit.

TABLE 9
NICKEL PRICES

| Date | Platts Metals Week: Cathode NY Dealer $/lb. | Platts Metals Week: LME Cash mean[1] $/t | Platts Metals Week: LME Cash mean[1] $/lb. | Platts Metals Week: 18/8 Stainless steel scrap Free market $/long ton (gw) | American Metal Market, 18/8 Stainless steel scrap Pittsburgh $/long ton (gw) |
|---|---|---|---|---|---|
| 2004: | | | | | |
| Average for month of: | | | | | |
| February | 6.968 | 15,145.125 | 6.870 | 1,537 | 1,585 |
| March | 6.203 | 13,715.000 | 6.221 | 1,458 | 1,563 |
| April | 6.056 | 12,848.125 | 5.828 | 1,397 | 1,503 |
| May | 5.185 | 11,118.289 | 5.043 | 1,281 | 1,367 |
| June | 6.063 | 13,533.523 | 6.139 | 1,241 | 1,208 |
| July | 6.990 | 15,023.295 | 6.814 | 1,430 | 1,402 |
| August | 6.320 | 13,679.524 | 6.205 | 1,481 | 1,560 |
| September | 6.112 | 13,270.909 | 6.020 | 1,405 | 1,470 |
| October | 6.523 | 14,404.286 | 6.534 | 1,413 | 1,470 |
| November | 6.488 | 14,045.455 | 6.371 | 1,506 | 1,562 |
| December | 6.286 | 13,768.810 | 6.245 | 1,457 | 1,523 |
| Yearly average | 6.341 | 13,823.241 | 6.270 | 1,427 | 1,473 |
| 2005: | | | | | |
| Average for week ending: | | | | | |
| February 4 | 6.82-6.90 | 14,599.500 | 6.622 | 1,500-1,540 | 1,500-1,525 |
| February 11 | 6.89-7.22 | 14,995.500 | 6.802 | 1,500-1,540 | 1,500-1,525 |
| February 18 | 7.18-7.29 | 15,418.500 | 6.994 | 1,500-1,540 | 1,500-1,525 |
| February 25 | 7.37-7.62 | 15,987.500 | 7.252 | 1,500-1,540 | 1,500-1,525 |
| March 4 | 7.33-7.72 | 16,103.000 | 7.304 | 1,590-1,610 | 1,550-1,575 |
| March 11 | 7.57-7.81 | 16,262.000 | 7.376 | 1,560-1,590 | 1,550-1,575 |
| March 18 | 7.55-7.67 | 16,170.000 | 7.335 | 1,605-1,640 | 1,550-1,575 |
| March 25 | 7.62-7.76 | 16,403.750 | 7.441 | 1,610-1,635 | 1,550-1,575 |
| Average for month of: | | | | | |
| January | 6.748 | 14,501.250 | 6.578 | 1,487 r | 1,513 |
| February | 7.065 | 15,344.625 | 6.960 | 1,520 | 1,513 |
| March | 7.510 | 16,184.524 | 7.341 | 1,609 | 1,563 |

[r]Revised.
[1]Mean of the cash buyer price and the cash seller and settlement price.


2000-2005 AVERAGE MONTHLY PRICES
(Derived from Metals Week and American Metal Market quotations)
NY Cathode and LME Cash ($/lb)
Scrap ($/long ton [gw])
New York Dealer Cathode
LME Cash
18-8 Stainless Steel Scrap
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
2000
2001
2002
2003
2004
2005


2000-2005 STOCKS
Thousand metric tons
LME
U.S. CONSUMERS
45
40
35
30
25
20
15
10
5
0
2000
2001
2002
2003
2004
2005